

## Snoring and Sleep Apnea

The noisy sounds of snoring occur when there is an obstruction to the free flow of air through the passages at the back of the mouth (pharyngeal tissue) and nose. This area is the collapsible part of the airway where the tongue and the upper throat meet the soft palate (roof of mouth) and the uvula (punching bag-like structure). Snoring results when these structures strike each other and vibrate during breathing. A short neck and obesity can further exacerbate the problem.

During sleep, the throat narrows, which may cause labored inspiration with obstruction called sleep apnea. The brain senses the increased inspiratory effort after 10-15 seconds and the individual partially arouses. There may be hundreds of such arousals in one night causing severe sleep disturbance. During the apneic spells there is a significant hypoxia (lack of oxygen) which can eventually result in the right heart strain, enlarged heart, high blood pressure and arrhythmias (irregular heart beat) as the heart muscle gets stretched.

There are many contributing factors to be considered in both snoring and sleep apnea and the answer is rarely simple. Therefore, a "staged" approach is employed to find the correct combination of treatments to address the issue. In stage one, several conservative measures can be attempted prior to undergoing a surgical procedure. Below are some contributing factors to snoring and sleep apnea and the conservative measures that one can try to minimize snoring.

| <b>Contributing Factors</b>  | <b>Conservative Measures</b>  |
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| Alcohol (reduces tone in the pharyngeal tissues and causes collapse)                   | Avoid alcohol for at least four hours prior to bedtime  |
| Medications (as above)   | Avoid antihistamines, tranquilizers or sleeping pills immediately prior to bedtime  |
| Menopause (as above)   | Consider hormone replacement therapy  |
| Nasal polyps or obstruction (airflow follows path of least resistance)                 | Nasal steroid sprays (shrinks swelling of nasal tissues to open nasal airway passages)<br>Breathe-rite® strips (Wegmans, Wal-Mart, etc.) opens nasal airway |
| Obesity  | Reduce weight with athletic lifestyle and healthy eating habits.<br>Avoid heavy meals or snacks three hours before bedtime.                                 |
| Position (Roof of mouth and uvula collapse to obstruct airway when lying on your back) | Sleep on your side rather than your back.<br>Tilt the head of the bed upward four inches  |
| Smoking (compromise effective air exchange)  | Smoking cessation program   |
| Structural (human anatomy) deformities   | CPAP (continuous positive airway pressure) mask or surgery  |

To determine if you have sleep apnea, the doctor will most likely recommend a sleep study. A sleep study helps determine which approach is best for you since some treatments address snoring while others address both snoring and sleep apnea.

The doctor will perform a complete head and neck examination and discuss the factors that are most significant in your individual case. This head and neck exam includes the use of a flexible laryngoscope, which is a soft, flexible tube that is about the diameter of the tip of a pencil. The laryngoscope has a bright light that illuminates the structures of the nose and posterior pharynx (back of mouth), and allows visualization of any airway obstruction. After spraying numbing medicine in the nose, the doctor will insert the laryngoscope into the nostril. It is not painful, and the duration of this portion of the exam lasts only a minute. With this instrument he can detect structural deformities such as a deviated nasal septum (a crooked partition between the two nostrils) nasal polyps (benign growths), enlarged uvula (punching bag-like structure), redundant soft palate (roof of mouth) tissue, enlarged tongue or the effects of a recessed jaw.

If the obstruction results from a structural deformity and conservative measures fail to provide the necessary relief, surgical options will then be discussed. When discussing surgery, it is again important to keep in mind that any one single factor rarely causes the airway obstruction. Therefore, while we hope that one treatment option alone will correct the snoring, more than one approach may be indicated for complete relief.

By now you are aware that there are wide ranges of treatment options - from conservative measures, including wearing a CPAP mask, to rare extreme cases which require a tracheotomy (breathing hole in the neck). After reviewing your health history, physical exam and sleep study results, the doctor will be able to distinguish if your snoring and/or sleep apnea are mild, moderate or severe. For mild cases, conservative measures already mentioned, a trial with a CPAP mask or possibly one procedure such as a septoplasty (straightening the divider between the two nostrils - an outpatient procedure that takes about an hour) may be all that's indicated. For moderate cases, a uvulopalatopharyngoplasty (UPPP) and/or septoplasty with or without CPAP may be indicated. For severe cases, any or all of the following may be indicated: a tracheotomy, significant weight loss, referral to oral surgeon and/or CPAP.

If you have not had a sleep study, your primary care provider or our office can assist you in scheduling this. Our office will also set up a follow-up appointment with the doctor to review the results of the sleep study. The time between your initial evaluation and follow-up evaluation with the doctor is a good opportunity to see if any intermediate procedures can be helpful such as using Breathe-rite® nasal strips, nasal steroids, sleeping on your side, avoiding alcohol and losing weight. When you return to review the results of the sleep study, you can also report results of any intermediate measures you have tried.

A final note - because so many patients ask us about insurance coverage, your insurance will request a sleep study since treatment for sleep apnea is routinely covered by insurance while treatment for snoring alone is not routinely covered. If the sleep study demonstrates that sleep apnea exists, frequently an HMO will request a trial of CPAP prior to authorizing a surgical procedure. Our patient care coordinator will be happy to discuss your individual insurance questions or concerns.

As always, if you have any questions, please do not hesitate to call on us at (585) 256-3550 and ask for our nurse. We are all here to assist you in any way we can.